

## ABSTRACT

A method and apparatus for requesting and allocating bandwidth in a broadband wireless communication system. The inventive method and apparatus includes a combination of techniques that allow a plurality of CPEs to communicate their bandwidth request messages to respective base stations. One technique includes a "polling" method whereby a base station polls CPEs individually or in groups and allocates bandwidth specifically for the purpose of allowing the CPEs to respond with bandwidth requests. The polling of the CPEs by the base station may be in response to a CPE setting a "poll-me bit" or, alternatively, it may be periodic. Another technique comprises "piggybacking" bandwidth requests on bandwidth already allocated to a CPE. In accordance with this technique, currently active CPEs request bandwidth using previously unused portions of uplink bandwidth that is already allocated to the CPE. The CPE is responsible for distributing the allocated uplink bandwidth in a manner that accommodates the services provided by the CPE. By using a combination of bandwidth allocation techniques, the present invention advantageously makes use of the efficiency benefits associated with each technique.